

the idol, several small clay doves and serpents' heads, all of coarse terra-cotta, and a fragment of a pithos, on which a double-axe and disc are modelled in relief."

This important find has since been paralleled by Dr. Evans's discovery at Knossos of a similar shrine of the snake-goddess with fine glazed faience figures, referred to in *NATURE* (vol. lxx. p. 482). But Miss Boyd was the first to discover the Minoan snake-goddess, of whose existence we had no inkling before the excavations at Gourniâ.

Another good find, of which Miss Boyd gives a fine facsimile plate, was the head of a bull in terra-cotta, a typically "Mycenæan" object, paralleled by the famous silver bull's head found by Schliemann at Mycenæ, and the Egyptian representations of golden *protomæ* of bulls being brought as gifts to the court of Thothmes III. by the Mycenæan (or rather "Minoan") ambassadors from "Kefti" (Crète).

Miss Boyd's work has contributed results to Mycenæan lore which are of the highest importance, results upon which the officers of the American Exploration Society at Philadelphia, which dispatched her expedition, are to be heartily congratulated.

H. R. HALL.

ELECTRICAL THEORY AND PRACTICE.

Maxwell's Theory and Wireless Telegraphy. By H. Poincaré and F. K. Vreeland. Pp. xi+255. (London: A. Constable and Co., Ltd., 1904.) Price 10s. 6d. net.

Alternating Currents. Vol. i. By A. Russell. Pp. xii+407. (Cambridge: The University Press, 1904.) Price 12s. net.

What Do We Know Concerning Electricity? By Antonia Zimmern. Pp. vii+140. (London: Methuen and Co., n.d.) Price 1s. 6d. net.

Modern Electricity. By J. Henry and K. J. Hora. Pp. 355. (London: Hodder and Stoughton, 1905.) Price 5s. net.

Modern Electric Practice. Vol. v. Edited by M. Maclean, Pp. vi+287. (London: The Gresham Publishing Co., 1904.) Price 9s. net.

Electricity Control: A Treatise on Electric Switch-Gear Systems of Electric Transmission. By Leonard Andrews. Pp. xv+231. (London: Chas. Griffin and Co., Ltd., 1904.)

THE electrical engineer who wishes to keep pace with the development of his profession and desires to know something more than that which concerns only the particular branch in which he is engaged has a very hard task before him at the present day. He must, in the first instance, endeavour to keep an eye on the technical literature—the innumerable journals and proceedings, the monthly magazines, and the weekly papers—of at least four countries in three different languages. This is in itself a task of no mean difficulty, which is heightened rather than diminished by the various "abstracts" available. So rapid is the multiplication of journals and papers that one is tempted to think that the best advice to give a student would be to read nothing, as if he tries to read much he will waste more time over what is of no value to him

than he will spend wisely on the one useful article in a thousand; one is tempted still more to wish that a rigorous technical censorship might be instituted which would allow nothing to find its way into print but that which was of permanent value to the world. In this way the amount of technical literature might be brought within reasonable limits by being reduced to, say, one-tenth of its present volume.

If this is true of the matter which is published in journals—which has, at least as a rule, the merit of originality—it is still more true of the matter which appears in the form of technical text-books. We imagine these books find a ready sale, else we cannot account for their publication; yet we do not know by whom they are read except the reviewers. This is exemplified by the six volumes before us, all of which have appeared within the last few months. With the exception of the first two, we would venture to say that it would have been just as well, and possibly even better, had they not been published. We do not mean thereby that they are bad books, though one of them we think, should not be left about where young electricians might see it; but they are not of merit enough to justify the expense of their publication or purchase.

Take, for example, Miss Zimmern's little volume; it is tastefully bound and clearly printed on good paper—there is something in its appearance strongly suggestive of a book of minor poetry. Add to this that it is pleasantly written and that there is nothing very seriously wrong with its statements, and its merits are summed up. On the other hand, we are confident that it would fail in its object of explaining the complex theories of modern electricity to the "general reader"; he might put down the book with the feeling that his knowledge had been increased, but it would be a mistaken notion. It requires genius of a very rare kind, such as was shown by Faraday in his "Chemical History of a Candle," or by Prof. Perry in his "Spinning Tops," to write a book of this kind; we intend no disparagement to the writer of this volume by saying that such genius is not shown in it.

Messrs. Henry and Hora's volume is of another stamp; in a preface which reads like a publisher's advertisement, the authors state that "the work will be found eminently practical, scientific, and accurate." We have found it quite the reverse, and feel sorry for the "apprentice" or "artisan" who "gains a complete knowledge of the fundamental principles of electricity" from its pages. This is a book which no self-respecting electrical censor, however lenient, would have allowed to appear in print.

The two last books on the list are not without merit or value, but it is at best of an ephemeral kind. Of "Modern Electric Practice" we have already expressed our views in writing of the previous volumes; the present one does not depart from the same high standard in production, and the three articles in section iv., dealing with boilers, engines, and auxiliary plant, are well written and well illustrated. The article on electrochemistry and electrometallurgy is less satisfactory. We must confess, however, that the inaccuracies noticed in previous volumes make us, unjustly perhaps, suspicious of the figures and data in the one be-

fore us. Mr. Andrews's book on "Electrical Control" is a descriptive treatise on switch-gear. It possesses the same disadvantages as "Modern Electric Practice"; one cannot learn electrical practice from a book; there is only one school—the practical school—in which one can learn the principles and details of construction of apparatus in one-tenth of the time and ten times as thoroughly as by means of written descriptions. Practical men are apt to complain that text-books are valueless, as they are written by theorists; we have read a great many text-books of late written by practical men, and have come to the conclusion that it is only the theorist who should write them. He can describe the underlying principles which persist when the fashion of their application alters; the practical man describes the methods of his practice which even as he writes become antiquated.

We have reserved to the last the two volumes which head our list. Messrs. Poincaré and Vreeland's book deserves a place in any electrical library on account of its remarkably simple and lucid explanation of Maxwell's theory and of the work of Hertz, Lodge, and others which led to the development of Hertzian telegraphy. This is from the pen of M. Poincaré, translated by Mr. Vreeland, and forms the first part of the book. The second part, written by Mr. Vreeland, deals with the problems presented by the practice of wireless telegraphy, and the writer, by wisely confining himself to principles rather than details, has succeeded in writing a worthy sequel to M. Poincaré's work.

Mr. Russell's book is the first volume of a mathematical treatise on alternating currents. Alternating current machinery is growing so steadily in importance, and the mathematical theory in connection with it is so complex, that there is plenty of room for a thorough and comprehensive work of this kind. The present volume deals with the general theorems, and the second will be devoted to the more specific theory of alternating current machines and the transmission of power.

MAURICE SOLOMON.

OUR BOOK SHELF.

Vegetationsbilder. Edited by Dr. G. Karsten and H. Schenck. Second series. Parts i.—viii. (Jena: Gustav Fischer, 1904.)

THE first series of the "Vegetationsbilder" met with well-merited success, and a second series has been appearing at intervals during the past year. Of the contributors to the first series, Drs. G. Karsten and E. Stahl have again supplied material, the former taking up a never-failing source of interest in the mangrove vegetation, whilst Dr. Stahl, in a double part, deals with the xerophytes and conifers of Mexico; amongst the latter the primeval *Taxodium* trees growing in the park of Chapultepec and the sombre cypresses on the road to the sacred mount of Amecameca bear the impress of historic antiquity. Another number, consisting of parts v. to vii., is devoted to the representation of mid-European forest trees, in accordance with an expressed desire for subjects taken from native sources. The photographs taken by Dr. L. Klein include typical specimens of conifers and beeches in the Schwarzwald and Switzerland, and others showing the changes wrought by browsing animals and devastating winds; many of them are excellent, notably a scene of wind-blown pines which have been entirely cleared of

branches except to leeward, but similar subjects are accessible to most botanists, and for this reason they do not possess the interest attaching to photographs from less accessible countries. The names of several new contributors are announced, among them Mr. E. Ule, whose character sketches of epiphytes in the Amazon region of Peru appear in the first part of this series. Of the Cactaceæ, which are widely spread through South America, a number of genera include epiphytic species, and in this region *Cereus* is predominant. *Cereus megalanthus*, a species which might be called a climbing epiphyte, is shown perched on a *Ficus* tree. Another curious condition is that of a flourishing bromeliad, *Streptocalyx angustifolius*, where, according to the writer, the exuberance of vegetation is so directly traceable to ants that he compares the phenomenon with the fungus gardens described a few years ago by Dr. A. Moeller. The last part of the series contains photographs taken in the Italian colony of Eritrea by Dr. Schweinfurth. *Hyphaene thebaica*, the doum palm, familiar on account of its branching habit, the sycamore fig, and an arboreal *Euphorbia* are among the characteristic specimens chosen to illustrate different regions in the country.

Author and Printer. An Attempt to Codify the best Typographical Practices of the Present Day. By F. Howard Collins. Pp. xv+408. (London: Henry Frowde, 1905.) Price 5s. net.

THE want of uniformity of spelling, capitalisation, punctuation, and use of italic type causes continual trouble to all who are responsible for the editorial supervision of scientific literature in any form. Some authors are more German than the Germans in their use of capitals, while others underline their manuscripts as freely as ladies do their correspondence. It is frequently difficult to decide questions of orthography, and to reduce individual practice to the consistent style, which is desirable in the columns of a periodical, but is not always maintained. Mr. Collins has prepared his book to help in this end, as a standard guide for "Authors, Editors, Printers, Correctors of the Press, Compositors, and Typists."

The volume contains more than twenty thousand separate entries of words arranged alphabetically. Included among these are abbreviations, disputed spellings, foreign words and phrases, divisions of words, and various rules and explanations which should prove of service to authors and editors. The proofs of the work have been read by many writers and others who can give authoritative opinions as to what is correct or customary, so that the book does not contain merely Mr. Collins's decisions, but a consensus of opinion edited by him.

Highways and Byways in Derbyshire. By J. B. Firth. With illustrations by Nelly Erichsen. (London: Macmillan and Co., Ltd.) Price 6s.

WITH this book as a guide, a tourist could spend many pleasant weeks in Derbyshire, and he would learn that every part of the county has literary and historical associations of great interest. But while the human side is so well represented, little notice is taken of nature, except from the æsthetic point of view. "Of natural history and geology," says the author, "there is frankly nothing in this book, of science nothing, of sport nothing."

Notwithstanding this confession of what we may be permitted to describe as sins of omission, notes and descriptions of places in which scientific readers are particularly interested occur here and there. For instance, a short account is given of the stone circle of Arborlow, the Stonehenge of the Midlands. The monument consists of a circular enclosure in which are a number of blocks of limestone, all lying flat on